The Economic Benefits of Comprehensive Immigration Reform

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The U.S. government has attempted for more than two decades to put a stop to unauthorized immigration from and through Mexico by implementing "enforcement-only" measures along the U.S.-Mexico border and at work sites across the country. These measures have failed to end unauthorized immigration and have placed downward pressure on wages in a broad swath of industries.

Comprehensive immigration reform that legalizes currently unauthorized immigrants and creates flexible legal limits on future immigration in the context of full labor rights would help American workers and the U.S. economy. However, the federal government's current policy is to step up its enforcement-only strategy without creating a path to legalization for the millions of undocumented immigrants currently living in the country.

Despite evidence that comprehensive reform would raise the "wage floor" for the entire U.S. economy, to the benefit of both immigrant and native-born workers, states such as Georgia, Alabama, and South Carolina have responded to federal delay tactics by enacting laws that restrict the rights of immigrants and invite racial profiling by local law enforcement. The most well-known of these laws is S.B. 1070 in Arizona, which remains largely unenforced due to legal challenges to its constitutionality by the U.S. Department of Justice.

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S.B. 1070 is specifically designed to trigger a mass exodus of undocumented immigrants from the state by making "attrition through enforcement the public policy of all state and local government agencies in Arizona" (State of Arizona 2010). Other states such as California, which attempted to take a similar path to Arizona's with its restrictive Proposition 187 in 1994, debate the merits of immigration reform while awaiting decisive action by the federal government.

The Arizona crackdown may play well politically for some local elected officials, but is it in the best economic interests of the state? The purpose of this article is to provide an answer to that basic question by presenting an economic analysis of the effect of different reform scenarios. If S.B. 1070-type laws accomplish the declared goal of driving out all undocumented immigrants, what effect will it actually have on national, state, and local economies? Conversely, what would be the impact on state economies if undocumented immigrants acquired legal status? The economic analysis in this article shows that the S.B. 1070 approach would have devastating economic consequences if its goals were accomplished.

The historical experience of legalization under the 1986 Immigration Reform and Control Act indicates that comprehensive immigration reform would raise wages, increase consumption, create jobs, and generate additional tax revenue. Even though IRCA was implemented during a period that included a recession and high unemployment (1990–91), it still helped raise wages and spurred increases in educational, home, and small business investments by newly legalized immigrants. Taking the experience of IRCA as a starting point, we estimate that comprehensive immigration reform would yield at least $1.5 trillion in added U.S. gross domestic product (GDP) over 10 years.[1] This is a compelling economic reason to move away from the current "vicious cycle" where enforcement-only policies perpetuate unauthorized migration and exert downward pressure on already low wages, and toward a "virtuous cycle" of worker empowerment in which legal status and labor rights exert upward pressure on wages.

[1]Similarly, an August 2009 report from the Cato Institute, which also uses CGE modeling, estimated that "a policy that reduces the number of low-skilled immigrant workers by 28.6 percent compared to projected levels would reduce U.S. household welfare by about 0.5 percent, or $80 billion," while "the positive impact for U.S. households of legalization under an optimal visa tax would be 1.27 percent of GDP or $180 billion" (Dixon and Rimmer 2009).

In this article, I use a computable general equilibrium (CGE) model to estimate the economic ramifications of three different scenarios: (1) comprehensive immigration reform that creates a pathway to legal status for unauthorized immigrants in the United States and establishes flexible limits on permanent and temporary immigration that respond to changes in U.S. labor demand in the future; (2) a program for temporary workers only that does not include a pathway to permanent status or more flexible legal limits on permanent immigration in the future; and (3) mass deportation to expel all unauthorized immigrants and effectively seal the U.S.-Mexico border. In addition to the national-level analysis, I look at the effect of the two extremes of immigration reform (scenarios 1 and 3) on Arizona and California, the former because mass depletion of the immigrant workforce is a real threat in light of S.B. 1070, and the latter because it is home to more immigrants than any other state. Within California, I focus on Los Angeles County to see the effects of the different reform scenarios at the local level.

The CGE model shows that comprehensive immigration reform produces the greatest economic benefits:

- Comprehensive immigration reform generates an annual increase in U.S. GDP of at least 0.84 percent. This amounts to $1.5 trillion in additional GDP over 10 years. It also boosts wages for both native-born and newly legalized immigrant workers. The effects would generate a $5.3 billion increase in California, a $1.9 billion increase in Los Angeles County, and a $1.68 billion increase in Arizona.
- The temporary worker program generates an annual increase in U.S. GDP of 0.44 percent. This amounts to $792 billion of additional GDP over 10 years. Moreover, wages decline for both native-born and newly legalized immigrant workers.
- Mass deportation reduces U.S. GDP by 1.46 percent annually. This amounts to $2.6 trillion in lost GDP over 10 years, not including the actual cost of deportation. (2) Wages would rise for less-skilled native-born workers, but would decline for higher-skilled natives, and would lead to widespread job loss. California would lose 3.6 million jobs under this scenario and its economy would shrink $302 billion. Los Angeles County would suffer 1.3 million job losses at a cost of $106 billion to the county economy. In Arizona, mass deportation would amount to 581,000 lost jobs and a $48.8 billion contraction of the state economy.

America's current approach to immigration policy, exemplified by Arizona's S.B. 1070, is economically self-destructive. A more forward-looking approach that puts all workers on a legal, even footing offers opportunity for a costless stimulus to local economies that improves fiscal balances in the short term and lays the foundation for robust, just, and widespread growth.

Enforcement-Only Policies Are Costly, Ineffective, and Counterproductive

In March 2006, Michael Chertoff, then secretary of Homeland Security, stated: "When you try to fight economic reality, it is at best an expensive and very, very difficult process and almost always doomed to failure" (Alden 2006). The current enforcement-only approach to unauthorized immigration is not cost-effective and has not deterred unauthorized migrants from coming to the United States when jobs are available. Rather, enforcement-only policies have wasted billions of taxpayer dollars while pushing unauthorized migration further underground. These policies have produced a host of unintended consequences: more deaths among border crossers, greater demand for people smugglers, less "circular migration" in favor of more "permanent settlement" among unauthorized immigrants, and further depressing of wages in low-wage labor markets. To date, significant declines in unauthorized immigration have occurred only during downturns in the U.S. economy when labor demand is dampened. Ironically, demographic trends in Mexico will likely accomplish what tens of billions of dollars in border enforcement clearly have not: a decline in the supply of migrants from Mexico who are available for jobs in the United States.

High Costs and No Benefits

The number of unauthorized immigrants in the United States has increased dramatically since the early 1990s despite equally dramatic increases in the amount of money the federal government spends on immigration enforcement. Since 1992, the year before the current era of concentrated immigration enforcement along the U.S.-Mexico border, the annual budget of the U.S. Border Patrol has increased by 714 percent, from $326 million in Fiscal Year 1992 to $2.7 billion in FY 2009 (DHS 2009). The cost ratio of Border Patrol expenditures to apprehensions has increased by 1,041 percent, from $272 per

apprehension in FY 1992 to $3,102 in FY 2008. At the same time, the number of Border Patrol agents stationed along the southwest border has grown by 390 percent, from 3,555 in FY 1992 to 17,415 in FY 2009 (DHS 2004, 2008, 2009).

The budget for U.S. Customs and Border Protection, the Border Patrol's parent agency within the Department of Homeland Security, has increased by 92 percent from $6.0 billion in FY 2003 to $11.3 billion in FY 2009. The budget of Immigration and Customs Enforcement (ICE), the DHS's interior-enforcement counterpart to CBP, has increased by 82 percent, from $3.3 billion in FY 2003 to $5.9 billion in FY 2009 (DHS 2011). Yet the unauthorized immigrant population of the United States has roughly tripled in size over the past two decades, from an estimated 3.5 million in 1990 to 11.9 million in 2008. The number of unauthorized immigrants in the country appears to have declined slightly since 2007 in response to the recession which began at the end of that year (Passel and Cohn 2009: 1; Hoefer, Rytina, and Baker 2009: 1–2; U.S. Immigration and Naturalization Service 2003: 10).

The fact is that nearly all unauthorized migrants still eventually succeed in entering the United States despite tens of billions of dollars of immigration-enforcement spending since the early 1990s. Wayne Cornelius and his colleagues at the University of California, San Diego, have conducted a long-term study of unauthorized migration and found that the vast majority of unauthorized immigrants (92 to 98 percent) keep trying to cross the border until they make it (Passel and Cohn 2008: 1; Hoeer, Rytina, and Baker 2009: 1). Cornelius has concluded that "tightened border enforcement since 1993 has not stopped or even discouraged migrants from entering the United States. Neither the higher probability of being apprehended by the Border Patrol, nor the sharply increased danger of clandestine entry through deserts and mountainous terrain, has discouraged potential migrants from leaving home"—provided that U.S. jobs are available (Cornelius et al. 2008: 3). Cornelius and his team have also found that far fewer Mexicans are coming to the United States with the onset of recession in December 2007 (Cornelius 2006).

The Unintended Consequences of Border Enforcement

Enforcement-only border policies have not stopped or even slowed the pace of unauthorized immigration, but they have distorted

the migration process in ways that produce unintended consequences which are detrimental for both the U.S. economy and unauthorized migrants themselves.

1. *Making the Southwestern Border More Lethal*. By channeling unauthorized migrants through extremely hazardous mountain and desert areas, rather than the relatively safe urban corridors used in the past, the concentrated border-enforcement strategy has contributed to a surge in migrant fatalities since 1995. The U.S. Government Accountability Office (2006) has estimated that the number of border-crossing deaths doubled in the decade following the beginning of enhanced border-enforcement operations (see Cornelius 2009). A report by the American Civil Liberties Union of San Diego and Imperial Counties estimates that 5,607 migrants died while crossing the border between 1994 and 2008 (ACLU 2009).
2. *Creating New Opportunities for People Smugglers*. Stronger enforcement on the U.S.-Mexico border has been a bonanza for the people-smuggling industry. Heightened border enforcement has made smugglers essential to a safe and successful crossing by closing safer, traditional routes. Wayne Cornelius's research in rural Mexico shows that more than 9 out of 10 unauthorized migrants now hire smugglers to get them across the border. Only a decade ago, use of smugglers was the exception rather than the rule (Jimenez 2009: 19). And the fees that smugglers charge have tripled since 1993. By January 2006, the going rate for Mexicans was $2,000 to $3,000 per head, and there is evidence of a further rise since that time (Cornelius 2006). But, even at these prices, it is still economically rational for migrants—and, often, their relatives living in the United States—to dig deeper into their savings and go deeper into debt to finance illegal entry.
3. *Promoting Permanent Settlement in the United States*. Given the high costs and physical risks of unauthorized entry, migrants have a strong incentive to extend their stays in the United States; and the longer they stay, the more probable it is that they will settle permanently (Preston 2009).
4. *Depressing Low-Wage Labor Markets*. The enhanced enforcement regime moves unauthorized workers further underground, lowering their pay and, ironically, creating a greater

demand for unauthorized workers. A 2008 report from the Federal Reserve Bank of Atlanta analyzes how this vicious cycle is activated and then expands as firms find themselves forced to compete for the supply of cheaper, unauthorized labor (Brown, Hotchkiss, and Quispe-Agnoli 2008). When a firm cuts costs by hiring unauthorized workers for lower wages, its competitors become more likely to hire unauthorized workers for lower wages as well in order to benefit from the same cost savings (Massy, Durand, and Malone 2003: 128–133).

Demographic Trends in Mexico

Migration flows from Mexico to the United States can be explained in large part by differences in labor demand and wages between the two countries, but economists also estimate that about one-third of total immigration from Mexico over the past four decades is the result of higher Mexican birth rates (Brown, Hotchkiss, and Quispe-Agnoli 2008). However, Mexico has begun to experience what will soon be a major reduction in the supply of new entrants into the North American labor force. As a result, Mexican migration to the United States is expected to continue declining in near future.

The birth rate in Mexico has fallen from nearly seven children per mother in the mid-1960s to just 2.2 today, barely above replacement rate and only slightly higher than the U.S. level of 2.1. Mexico's birth rate is expected to fall below replacement level over the coming decade (Hanson and McIntosh 2007). This is one of the fastest declines in fertility ever recorded in any nation. In the 1990s, when unauthorized migration from Mexico reached record levels, its working-age population was growing by one million each year—today that growth rate is 500,000 (United Nations 2008: 67).

Although the United States will continue to attract many Mexicans seeking higher wages and a better life, the population pressures of the past two decades are already starting to recede, and a reduction in the pressures to migrate to the United States will likely follow. An early indication of this shift is seen in the increasing age of apprehended migrants. The share of apprehended immigrants under the age of 25 was 3.0 percentage points lower in 2008 compared to 2005, while the share of those over the age of 35 was 2.5 percentage points higher (Sedano 2008).

Lessons from the Immigration Reform and Control Act of 1986

The recent history of U.S. immigration policy also offers important insights into the economic benefits of providing unauthorized immigrants with legal status and the drawbacks of immigration-reform efforts that are not sufficiently comprehensive in scope.

The 1986 Immigration Reform and Control Act granted legal status to 1.7 million unauthorized immigrants through its "general" legalization program, plus another 1.3 million through a "Special Agricultural Workers" program (Rytina and Simanski 2009: 2). Studies of immigrants who benefited from IRCA's general legalization program indicate that they soon earned higher wages and moved on to better jobs—and invested more in their own education so that they could earn even higher wages and get even better jobs.

Higher wages translate into more tax revenue and increased consumer purchasing power, which benefits the public treasury and the U.S. economy as a whole. But IRCA failed to create flexible limits on future immigration that were adequate to meet the growing labor needs of the U.S. economy during the 1990s. As a result, unauthorized immigration eventually resumed in the years after IRCA (despite an initial decline), thereby exerting downward pressure on wages for all workers in low-wage occupations.

Surveys conducted by Westat, Inc. for the U.S. Department of Labor found that, on average, the real hourly wages of immigrants who acquired legal status under IRCA's general legalization program had increased 15.1 percent by 1992 (four to five years after legalization in 1987 or 1988). On average, men experienced a 13.2 percent wage increase and women a 20.5 percent increase (Massey, Durand, and Malone 2003: 90). Based on the same survey data, economists Sherrie Kossoudji and Deborah Cobb-Clark (2000) found that 38.8 percent of Mexican men who received legal status under IRCA had moved on to higher-paying occupations by 1992 (Smith, Kramer, and Singer 1996: 102).

Other researchers have also analyzed these survey data and supplemented them with data from additional sources—such as the 1990 Census and the National Longitudinal Survey of Youth—in an effort to determine how much of the wage increase experienced by IRCA beneficiaries was the result of legalization per se, as opposed to the many other variables that influenced wage levels for different workers in different occupations during the same period of

time. Although the findings of these researchers vary according to the economic models they use, the results are uniformly positive:

- Economist Francisco Rivera-Batiz (1999) estimated that, by 1992, the very fact of having legal status had resulted in a wage increase of 8.4 percent for male IRCA beneficiaries and 13 percent for female IRCA beneficiaries—independent of any increase in earning power they might have experienced as a result of acquiring more education, improving their mastery of English, or other factors (Kossoudji and Cobb-Clark 2000).
- Economists Catalina Amuedo-Dorante, Cynthia Bansak, and Stephen Raphael (2007) estimated that, by 1992, real hourly wages had increased 9.3 percent for male IRCA beneficiaries and 2.1 percent for female IRCA beneficiaries—independent of broader changes in the U.S. economy that might have impacted wage levels generally (Rivera-Batiz 1999).
- Kossoudji and Cobb-Clark (2002) estimated that, by 1992, legalization had raised the wages of male IRCA beneficiaries 6 percent—independent of broader changes in the U.S. and California economies that might have impacted wage levels generally (Amuedo-Dorantes, Bansak, and Raphael 2007).

The experience of IRCA also indicates that legalization greatly increases the incentive for formerly unauthorized workers to invest in themselves and their communities—to the benefit of the U.S. economy as a whole. As Kossoudji and Cobb-Clark (2002) explain, the wages of unauthorized workers are generally unrelated to their actual skill level. Unauthorized workers tend to be concentrated in the lowest-wage occupations; they try to minimize the risk of deportation even if this means working for lower wages; and they are especially vulnerable to outright exploitation by unscrupulous employers. Once unauthorized workers are legalized, however, these artificial barriers to upward socioeconomic mobility disappear.

IRCA allowed formerly unauthorized workers with more skills to command higher wages, and also provided a powerful incentive for all newly legalized immigrants to improve their English-language skills and acquire more education so they could earn even more. Kossoudji and Cobb-Clark (2000) estimate that if the men who received legal status under IRCA had been "legal" throughout their entire working lives in the United States, their wages by 1992 would

have been 24 percent higher because they would have been paid in relation to their actual skill level since arriving in the country—and would therefore have had an incentive to improve their skills to further increase their earning power (Kosssoudji and Cobb-Clark 2002).

A recent research project by the North American Integration and Development Center at UCLA on the 20-year impact of IRCA documents a number of important long-term improvements among previously unauthorized immigrants. The study illustrates how removing the uncertainty of unauthorized status not only allows legalized immigrants to earn higher wages and move into higher-paying occupations, and also encourages them to invest more in their own education, open bank accounts, buy homes, and start businesses. These are long-term economic benefits that continue to accrue well beyond the initial five-year period examined by most other studies of IRCA beneficiaries (Kosssoudji and Cobb-Clark 2002).

Effective Immigration Reform Must Address Future Flows

Unauthorized immigration to the United States initially declined following the passage of IRCA (Takash and Hinojosa-Ojeda). However, IRCA failed to create flexible legal limits on immigration that were capable of responding to ups and downs in future U.S. labor demand. It attempted to stop unauthorized immigration through employer sanctions that imposed fines on employers who "knowingly" hire unauthorized workers. Yet it was unable to put an end to unauthorized immigration given the U.S. economy's continuing demand for immigrant labor in excess of existing legal limits on immigration, as well as the ready availability of fraudulent identity documents and the inherent difficulty of proving that an employer has "knowingly" hired an unauthorized worker.

A new, easily exploited unauthorized population arose in the United States during the economic boom of the 1990s. Moreover, the costs of employer sanctions were passed along to all Latino workers (regardless of legal status or place of birth) in the form of lower wages. This resulted in part from increased anti-Latino discrimination against job applicants who "looked" as if they might be unauthorized, and in part from the increased use of labor contractors by employers who wanted to distance themselves from the risk

of sanctions by having someone else hire workers for them—for a price which was ultimately paid by the workers (Orrenius and Zavodny 2001: 14).

Present-Day Economic Impact of Immigrants

Debates about the economic and fiscal impact of immigrants typically oversimplify the role that immigrants play in our economy. But the impact that immigrants (or any cohort for that matter) have on the economy is multifaceted and complex. Immigrants are not just workers; they are also consumers and taxpayers. The effects of their labor and consumption on economic growth and fiscal health must be factored in as we consider how to address the situation of a large undocumented workforce. This section examines the economic and fiscal impact immigrants—documented and undocumented—currently make in Arizona. To understand the full potential impact of changes to immigration policy at the state and local levels, this paper also examines the impact immigrants currently make in California and Los Angeles County, the state and county with the largest immigrant populations in the country.

As of 2008, immigrants accounted for 27.1 percent of the population in California, 35.5 percent in Los Angeles County, and nearly 15 percent in Arizona's population. Undocumented immigrants alone accounted for 7.4 percent of California's population, 10.2 percent of Los Angeles County's, and 7 percent of Arizona's (Davila, Pagan, and Grau 1998; Phillips and Massey 1999; Orrenius and Zavodney 2003). Given that immigrants are predominantly drawn to the United States in search of improved economic opportunity, large numbers of these immigrants are in the workforce. That, in turn, means they also contribute significantly to the local economies.

In terms of 2008 gross product (the total value added by workers of goods and services produced in the considered area), immigrant workers added $492 billion to California, $177 billion to Los Angeles County, and $47.1 billion to Arizona. The undocumented workforce by itself added $158 billion to California's gross product, $59 billion to Los Angeles County's, and $23.5 billion to Arizona's. Similarly, the economic output of immigrant workers—the total value of all goods and services produced in the economy—was $900 billion in California, $318 billion in Los Angeles County, and $84.6 billion in Arizona. Output of undocumented immigrant workers was $288 billion

in California, $106 billion in Los Angeles County, and more than $42 billion in Arizona.

Immigrant workers do not only produce important goods and services; they also earn money that they spend in the local economy, contributing to economic growth and job creation. Pre-tax earnings of immigrant workers are significant—$274 billion in California, $96 billion in Los Angeles County, and $30 billion in Arizona, including $88 billion, $32 billion, and nearly $15 billion for undocumented workers, respectively. The output and spending of all immigrant workers has created 11.4 million jobs in California, 3.7 million jobs in Los Angeles County, and 1.2 million jobs in Arizona, while the output and consumption of just undocumented workers has generated 3.6 million jobs in California, 1.2 million in Los Angeles County, and 581,000 in Arizona. Rounding out this snapshot of immigrants' present economic contributions is the fact that immigrant workers pay billions of dollars in taxes. Just like native-born citizens, immigrants pay personal taxes (like income tax and property tax), business taxes (like corporate profit taxes, dividends, and property taxes), and sales taxes. Our analysis estimates that immigrants paid $95 billion in taxes in California in 2008, $32 billion in Los Angeles County, and $6 billion in Arizona. Undocumented immigrants paid $26 billion, $9 billion, and $2.8 billion, respectively. The upshot: Immigrants living and working in the U.S., as exemplified by our focus areas, make significant contributions to the overall prosperity of local economies. So what would happen if all the undocumented immigrants were driven from the United States? Conversely, what would happen if the country's undocumented immigrants were offered a path to legalize their status? We now turn to these questions.

Three Immigration Policy Scenarios

The federal government has three basic choices when it comes to immigration reform: comprehensive reform, use of temporary workers, and mass deportation. The economic impact of each of these three scenarios is analyzed over the course of 10 years by taking the historical experience of legalization under IRCA as a starting point and using a computable general equilibrium model (see Appendix).

The comprehensive immigration reform scenario yields the greatest benefits for the U.S. economy—roughly $1.5 trillion in additional

GDP growth over 10 years—while increasing wages for all workers. A program for temporary workers produces only half the economic gains of comprehensive immigration reform—$792 billion over 10 years—and lowers wages for all workers. And mass deportation costs the U.S. economy $2.6 trillion in lost GDP over 10 years and causes widespread job losses, although it increases wages only for less-skilled native-born workers.

Scenario 1: Comprehensive Immigration Reform

In this scenario, the U.S. government enacts immigration reform that allows unauthorized immigrants to come forward and register, pay an application fee and a fine, and—if they pass a criminal background check—earn legal status and, eventually, U.S. citizenship. Applicants would also be required to learn English and pay any back taxes owed. Any future levels of permanent and temporary immigration to the United States would be based on the demand for labor in the United States.

All immigrant workers in this scenario have full labor rights, which results in higher wages—and higher worker productivity—for all workers in industries where large numbers of immigrants are employed. As wage and productivity levels rise, the U.S. economy's demand for new immigrant workers actually declines over time as the market shrinks for easily exploited, low-wage, low-productivity workers.

This comprehensive immigration reform scenario generates an annual increase in U.S. gross domestic product of at least 0.84 percent. This amounts to $1.5 trillion in additional GDP over 10 years. Both native-born and newly legalized immigrant workers would see their wages rise.

This scenario uses the parameters of the IRCA experience to simulate the impact on the U.S. economy of the higher wages that would be earned by newly legalized workers, as well as the higher worker productivity which would result from the movement of workers into new occupations and from increased investment by workers in their own education and skills. This model does not, however, capture a range of other economic benefits which have been documented among IRCA beneficiaries, such as increased household investments in the education of family members and increased rates of home ownership and small-business formation. The results of our

modeling should therefore be viewed as a conservative, baseline estimate of the actual economic benefits which would flow from comprehensive immigration reform.

Scenario 2: A Program for Temporary Workers Only

In this scenario, the U.S. government creates a new temporary-worker program that encompasses both currently unauthorized immigrants and future immigrants, but with limited labor rights and on a temporary basis only. Neither unauthorized immigrants nor future temporary immigrants would be granted a pathway to permanent status or U.S. citizenship.

Immigrant workers in this scenario have limited labor rights, which drive down wages and productivity for all workers in industries where large numbers of immigrants are employed. This legal immigration would respond to changes in U.S. labor demand, but at relatively low wages and without the buildup of human capital and labor productivity that occurs over time among permanently legalized workers. As a result, future levels of immigration are actually higher under this scenario than under comprehensive immigration reform because more workers are needed to produce the same level of output under lower-wage, lower-productivity conditions.

This scenario generates an annual increase in U.S. GDP of 0.44 percent, compared to the 0.84 percent GDP increase under comprehensive immigration reform. The temporary-workers scenario amounts to $792 billion of additional GDP over 10 years, compared to $1.5 trillion under comprehensive immigration reform. Wages also fall for both native-born and newly legalized immigrant workers under this scenario.

Scenario 3: Mass Deportation

In this scenario, the U.S. government would deport more than 4 million immigrant workers and their dependents, or—if they are not already here—never allow them to enter the United States. This scenario is not a realistic policy option, but it serves as an extreme or boundary case against which we can evaluate the other two scenarios.

The mass deportation scenario reduces U.S. GDP by 1.46 percent annually, compared to comprehensive immigration reform, which increases it by 0.84 percent annually, and the temporary-workers program, which increases it by 0.44 percent annually. This

amounts to $2.6 trillion in lost GDP over 10 years, compared to $1.5 trillion in additional GDP under comprehensive immigration reform and $792 billion in additional GDP under the temporary worker program. Wages do rise for less-skilled native-born workers under this scenario, but they fall for higher-skilled natives and the U.S. economy loses a large numbers of jobs.

It is important to note that, while this scenario estimates the broader economic impact of mass deportation, it does not take into account the actual cost of mass deportation. The Center for American Progress has pegged this cost at somewhere between $206 billion and $230 billion over five years (using 2008 data before release of California-specific 2010 data by the U.S. Census Bureau).

The Economic Benefits of Comprehensive Immigration Reform

The results of our modeling suggest that comprehensive immigration reform would increase U.S. GDP by at least 0.84 percent per year. Using 10-year GDP projections prepared by the Congressional Budget Office, this translates into a steadily increasing amount of added annual GDP over the coming decade. The 10-year total is at least $1.5 trillion in added GDP, which includes roughly $1.2 trillion in additional consumption and $256 billion in additional investment.

Comprehensive immigration reform brings substantial economic gains even in the short run—during the first three years following legalization. The real wages of newly legalized workers increase by roughly $4,400 per year among those in less-skilled jobs during the first three years of implementation, and $6,185 per year for those in higher-skilled jobs. The higher earning power of newly legalized workers translates into an increase in net personal income of $30 billion to $36 billion, which would generate $4.5 to $5.4 billion in additional net tax revenue nationally, enough to support 750,000 to 900,000 new jobs.

Ultimately, only the federal government can resolve the status of the undocumented. But for the purposes of our analysis, we examine what would happen on a state and county level if local workforces were fully legalized through comprehensive immigration reform.

In California, which faces a $25.4 billion budget shortfall in 2011–12, this scenario would lead to a $27 billion increase in labor

income (pre-tax salary and wage earnings) that would generate a $5.3 billion boost in tax revenue for the state and add 633,000 desperately needed jobs to the economy. In Los Angeles County, labor income would increase $10 billion through legalization, leading to $1.9 billion in additional net tax revenue and 211,000 new jobs. In Arizona, the same legalization scheme would generate $5.6 billion more in labor income, leading to $1.68 billion in tax revenue and an additional 261,000 jobs.

The wages of native-born workers also increase under the comprehensive immigration reform scenario because the "wage floor" rises for all workers—particularly in industries where large numbers of easily exploited, low-wage, unauthorized immigrants currently work. Wages for native-born U.S. workers increase by roughly $162 per year for the less-skilled and $74 per year for the higher-skilled. Under the temporary worker program scenario, wages fall for both less-skilled and higher-skilled native-born U.S. workers. And under the mass deportation scenario, wages for less-skilled native-born workers actually rise, but only at the cost of significantly fewer jobs as the economy contracts and investment declines. The cost of this scheme to local economies, however, is staggering.

If California's workforce were depleted by mass deportation, the resulting contraction of the economy would mean a loss of $176 billion in labor income and a reduction in gross product of $300 billion, or 17 percent of the state economy. As a result, 3.6 million jobs would be lost. Los Angeles County would be even harder hit, with the $60.1 billion loss in labor income causing a 22 percent reduction in the local economy and the loss of 1.2 million jobs. Arizona's case is almost as severe, with the $29.5 billion the state would lose in labor income as a result of mass deportation and the $48.8 billion reduction in gross product representing a 20 percent depletion of the economy and the loss of 581,000 jobs.

The benefits of additional U.S. GDP growth under the comprehensive immigration reform scenario are spread very broadly throughout the U.S. economy, with virtually every sector expanding. Particularly large increases occur in immigrant-heavy industries such as textiles, ferrous metals, transportation equipment, electronic equipment, motor vehicles and parts, nonelectric machinery and equipment, capital goods, mineral products, and construction. In comparison, every sector experiences significantly smaller gains

under the temporary worker scenario, while every sector contracts under the mass deportation scenario.

Conclusion

The experience of IRCA and the results of our modeling both indicate that legalizing currently unauthorized immigrants and creating flexible legal limits on future immigration in the context of full labor rights would raise wages, increase consumption, create jobs, and generate additional tax revenue—particularly in those sectors of the U.S. economy now characterized by the lowest wages. This is a compelling economic reason to move away from the current "vicious cycle" where enforcement-only policies perpetuate unauthorized migration and exert downward pressure on already-low wages, and toward a "virtuous cycle" of worker empowerment in which legal status and labor rights exert upward pressure on wages.

Legalization of the nation's unauthorized workers and new legal limits on immigration that rise and fall with U.S. labor demand would help lay the foundation for robust, just, and widespread economic growth. Moving unauthorized workers out of a vulnerable underground status strengthens all working families' ability to become more productive and creates higher levels of job-generating consumption, thereby laying a foundation for long-term community revitalization, middle-class growth, and a stronger, more equitable national economy.

Appendix: Methodology

This article presents the results of a computable general equilibrium modeling project on the United States and Mexico in the context of a multiregional world economy. It is designed to analyze scenarios of alternative immigration policies, as well as alternative trade policies (Goyle and Jaeger 2005). The results of this integrated CGE model allow us to analyze how these migration and trade policies affect differently skilled labor within a common comparative framework.

As is typical in CGE models of this type, trade is motivated by both price differentials and regional characteristics of goods (Hinojosa-Ojeda et al. 2009). Services trade is included, such that none of the 29 sectors in the models is "purely nontraded." Trade liberalization can consist of reducing or eliminating manufacturing tariffs, all tariffs,

or all barriers, including nontariff barriers. Immigration is motivated by real-wage differentials and influenced by immigration policies. Migrant remittances are explicitly modeled, and are affected by any policy that affects migration levels or migrant earnings.

CGE models are typically used to run "comparative static" experiments. An experiment is constructed by changing key variables and observing how the equilibrium adjusts. This gives the researchers an approximate picture of how the economy in the base year would have looked if the changes being simulated in a particular scenario had occurred years ago and the economy had fully adjusted to the change. A more accurate dynamic model would simulate how the economies would adjust over a period of time to policy changes made in the model's base year. This would allow the incorporation of important factors such as savings and investment, demographic change, and human capital formation.

Our model simulates the effect of immigration policies primarily through two variables: (1) Raising or lowering the level of domestic wages earned by migrants. For example, wages and productivity of legalized migrants increase with immigration reforms that grant those workers additional rights and encourage investments in their human capital. (2) Altering the responsiveness (elasticity) of migration with respect to any given wage differential. For example, additional enforcement lowers immigration for a given wage differential (Armington 1969).

Immigration and trade interact in the model in several important ways. The presence or absence of immigrants in a country affects the relative price of goods, and thus trade flows. Openness to trade affects wage levels, and thus immigration incentives. Remittances affect the balance of payments and thus trade flows. Remittances further fuel investment and growth in migrant-sending regions, thus affecting wages, prices, trade, and migration.

This article uses a global applied general equilibrium model that has been adjusted to take into account bilateral labor flows (Orrenius and Zavodny 2001: 14). The model, termed GMig2, represents a significant improvement on the model developed in Terrie L. Walmsley and Alan L. Winters (Hertel 1997). The GMig2 model takes advantage of the recent bilateral migration database developed by Parsons et al. (2005), which can track bilateral labor movements (Walmsley and Winters 2005). The global migration model (GMig2) is documented by Terrie Walmsley et al. (2007b) and Parsons et al. (2005).

The database used with the bilateral labor migration model (GMig2) is based on the GTAP 6 Data Base (Walmsley et al. 2007a) and is augmented with the bilateral migration data base developed by Parsons et al. (2005) and Dimaranan (2006), skill data from Docquier and Rapoport (2007) and Parsons et al. (2005), and remittance data from the World Bank (Ratha, D., and Xu, Z. 2008). Walmsley et al. (2007a) document the GMig2 database construction process.

The GMig2 model tracks both the home and host region of each person and worker. The home region is defined as the country of origin of the person or worker—that is, his or her place of birth in the database. The host region is the region in which the person resides or works. The labor force of skill i, located in region r ($LF_{i,r}$), and available to firms for production, is therefore the sum across home regions c of all workers located in the host region r, as shown in equation 1. This is the same for population in equation 2.

$$(1)\quad LF_{i,r} = \sum_{c} LF_{i,c,r}$$

$$(2)\quad POP_{r} = \sum_{c} POP_{c,r}$$

An increase in the number of migrant workers from region c to region r would reduce the number of workers in the labor-supplying region and increase the labor force of the labor-importing region. The populations would change in a similar way, since it is assumed that migrant workers move with their families.

Changes in the number of migrants can occur in two ways in the GMig2 model: as an exogenous change in the supply and/or demand for migrant workers, such as changes in quotas; or as endogenous movements of migrant workers in response to wage differentials. Movements in migrant workers occur endogenously in this report, except in the zero Mexican migration scenario, where a hypothetical enforceable quota of zero migrants from Mexico is set without allowing compensating flows based on changing wage differentials.

Migrants are assumed to respond to differences in the real wages between the home ($RW_{i,c,c}$) and host ($RW_{i,c,r}$) region. ESUBMIG in equation 3 is a parameter reflecting the extent to which migrants respond to differences in real wages; this parameter would also reflect any restrictions on migration flows imposed by the host or home country policies.

$$(3)\quad LF_{i,c,r} = A_{i,c,r} \times \left[\frac{RW_{i,c,r}}{RW_{i,c,c}}\right]^{ESUBMIG_{i,r,s}}$$

Note that with endogenous movements responding to changes in real wages, migrants can either migrate or return home depending on the trade and/or migration policy's effect on real wages. Policies that increase real wage differentials lead to higher levels of migration, while those which reduce the wage differential lead to lower migration levels (Walmsley et al. 2007a, 2007b).

Migrant workers are assumed to gain a portion of the difference between their nominal wages at home and the nominal wages in the host region, reflecting the fact that their productivities have also changed as they move from the home to the host region and interact with the resources and technology of that host region. Changes in real wages and incomes are also considered, since different purchasing power between regions is also an important factor in the immigrant's decision on whether to migrate (Timmer and van der Mensbrugghe 2001).

Changes in migration policies are implemented in two ways in this report. (1) The responsiveness of migration to real-wage differentials (ESUBMIG) can be shocked to reflect changes in migration policy, which increase or decrease people's ability to migrate in response to wages. (2) The ratio of a migrant's wage in the host country to the home country wage can be altered to reflect changes in the productivities of migrants resulting from changes in migration policy. This ratio is referred to as BETA.

A tightening or loosening of migration policy involves reducing or increasing the responsiveness of migrants to wage differentials (ESUBMIG), and/or reducing or increasing the productivity, or lowering the ratio of migrant wages to home wages (BETA). The model is also consistent with standard trade theory—countries benefiting from inward migration experience a decline in the marginal product/wage of labor as they move down their marginal product curves, and production increases as firms gain greater access to cheaper labor. Returns to capital also increase as capital becomes scarce relative to labor. The reverse is true for those countries experiencing outward migration.

Remittances are also an important feature in the model. Remittances are assumed to be a constant proportion of the income

received by migrant workers and flow out of the host country back to the permanent residents of the home country. Total remittances therefore increase as the number of new migrants or their wages increase. Remittances reduce the income of the migrants and increase the incomes of permanent residents back home. These remittances can have an important offsetting effect on the home economies (labor suppliers), on the incomes of permanent residents remaining at home, and on the current account balances of both the home and host countries. Thus migration works to narrow real-wage differentials between countries in two ways: raising labor productivity in the sending country and lowering it in the receiving country ("leveling down") and promoting improvements in living standards in sending regions through remittances (potentially "leveling up").

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